REMARKS

Amended claims 1-6 in the PCT application have been canceled herein, and the subject matter thereof represented as new claims 7-26. The new claims conform to regular U.S. practice by eliminating multiple dependencies, among other changes.

In addition, a substitute specification is included herewith to conform to regular U.S. practice. Headings have been inserted, clarification has been made for the purposes of making grammatical sense and proper English. No new matter is introduced hereby.

A marked up version showing the changes made is also attached. Applicant respectfully requests that the amendment and substitute specification be entered.

A new Abstract is also submitted herewith.

Respectfully submitted,

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METHOD FOR DETERMINING CHARGES IN REAL TIME FOR VALUE-ADDED SERVICES IN A TELECOMMUNICATION NETWORK

BACKGROUND OF THE INVENTION

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1.   Field of the Invention

The present invention relates to a method for determining charges in real time for value-added services in a telecommunication network.

10   ### 2.   Background

There are various methods for implementing value-added services in telecommunication networks. In telecommunication networks such as public switched telephone networks and mobile telephone networks, some value-added services are offered as services by the network operator. Common services include communication-specific services that facilitate or expand upon connections-oriented traffic. The best known examples of this type are ISDN (Integrated Services Digital Network) and GSM (Global System for Mobile Communications) features of the corresponding ETSI (European Telecommunications Standards Institute) recommendations including call diversion, call forwarding, callback on busy, call waiting, etc. These services are implemented and operated by the network operator in the telecommunication network (in public exchanges) and in the intelligent network control SCP

(Service Control Point) and SMS (Service Management System). In addition, there are value-added services such as voicemail (answering machine),

25 messaging, recorded information service, information service (weather, lottery numbers, news, or the like) that are offered by the network operator or by external value-added service providers. These can also include traffic information services. As a rule, this service category can only be accessed by network-specific customers when they dial corresponding telephone numbers; as

30 a rule, the use of the service is linked to calling the value-added service provider and a corresponding fee is automatically charged via the telecommunication bill. Up to this point, it has not been possible to determine the charges in real time for the value-added service being used in the telecommunication network or to change the rate during a call to a value-added service provider.

35 WO01/26353A1 has disclosed a method for changing the taxation type of communication connections during a connection, in particular when using value-added services, in which a caller can select a value-added service by dialing an associated destination number and the destination number is intercepted in a network element of an intelligent network (IN) of the telecommunication

40 network. In the intelligent network element, this destination number is converted into a special access number for the value-added service. This special access number is then used to establish a connection between the intelligent network element and the value-added service provider using the access number and is

switched through to the caller. It is not possible to inform the caller about the

45   rate for the connection or to determine charges in real time in the

telecommunication network.

SUMMARY OF THE INVENTION

The objectA purpose of the invention is to discloseprovide a method that

50   permits a determination of charges in real time for value-added services by

means of a telecommunication network.

This object is attained according to the invention by the characterizing

features of claim 1.

Advantageous embodiments and modifications of the invention are .

55   disclosed in the dependent claims.

The An advantage of the invention lies in the fact that the network

operator of the telecommunication network, and possibly the caller himself, is

immediately informed of the applicable rate for the value-added service so that

the network operator can charge for the service in real time. This is particularly

60   advantageous if the call is to be accounted for via a so-called prepaid subscriber

relationship.; in In this case, the fee for the value-added service can be debited

directly from the prepaid account.

The method described aboveof the invention also advantageously permits

a rate change during a call to a value-added service provider.

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BRIEF DESCRIPTION OF THE DRAWING

~~An exemplary embodiment of the invention will be explained below in conjunction with Fig. 1. Fig. 1 describes the general steps for executing the method.~~ The objects, advantages, and features of an embodiment of the invention

70 will be more clearly perceived from the following detailed description, when read in conjunction with the accompanying drawing, wherin:

Fig. 1 is a flow chart showing general steps for executing the method of the invention.

75   ## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In this exemplary embodiment, it is assumed that a subscriber of a mobile telephone network wishes to use his mobile telephone terminal to access a value-added service in a public switched telephone network. A value-added service is typically accessed by calling a special telephone number such as a so-called 0900

80 number. In the public switched telephone network, the rate is usually only determined upon establishment of the connection (offline billing). This does not make it possible for the network operator of the mobile telephone network to determine charges in real time.

According to the invention, the call to a 0900 number, ~~e.g.~~ for example,

85 the telephone number $0900\ x_1...x_9$, where the telephone number component

$x_1...x_9$ identifies the value-added service, is first intercepted in an intelligent network element of the mobile telephone network and converted into a predetermined access number, ~~e.g.~~for example, 0121100 $x_1...x_9$ of the value-added service. This number is used to establish a connection between the

90 intelligent network element and the value-added service provider, ~~e.g.~~for example, a corresponding communications server. The call to this access number occurs without the caller's knowledge and at no charge. Depending on the identification of the value-added service by the existing number component $x_1...x_9$, the call recipient, ~~i.e.~~that is, the value-added service provider, can

95 determine the rate to be charged for the use of the service. This rate is transmitted by means of a signal from the value-added service provider to the intelligent network element of the mobile telephone network operator, in fact, through transmission of a new destination number for the requested value-added service. According to the invention, the user-to-user datum USR in the release

100 message can be used to transmit the new destination number. The release message is a report that can be sent ~~section by section~~ section-by-section in both directions of an intelligent network. This command terminates the user channel connection. The USR report can be sent via an end-to-end connection using the SCCP protocol.

105 The destination number transmitted has, for example, the format 01211 $y_1y_2 x_1...x_9$, where the rate is encoded at the positions y_1y_2. ~~in~~In this example,

there are thus 99 possible rate levels. The release message is evaluated by the intelligent network element of the mobile telephone network operator and a connection is initiated between the original caller and this telephone number.

110   The accounting data, the so-called billing record, now contains the new telephone number 01211 y_1y_2 $x_1...x_9$ as the telephone number, which permits the accounting systems to allocate a rate. This telephone number can also be used to announce a price to the caller. If the value-added service provider then wishes to change the rate, it terminates the call and transmits a new destination number in

115   the release message, ~~e.g.~~for example, 01211 z_1z_2 $x_1...x_9$~~; the~~ The above-described process repeats, ~~i.e.~~that is, the release message is evaluated by the intelligent network of the value-added service operator and a connection is initiated between the original caller and the new telephone number at the new rate, naturally. This method can be repeated any number of times.

120   The above-described steps are shown in the flow chart of Fig. 1.

The value-added service provider can, as needed, retain a context for the caller (CgPty) so that when entering the next price level, the caller is not treated as a new caller ~~due to the fact that~~even though a new call is, in fact, physically being made.